The proper binding condition and theta-marking

The Proper Binding Condition and Theta-Marking

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1. Introduction

This paper explores how A-movement copies (henceforth, A-copies) are licensed. While an A'-movement copy seems to be well-motivated given that it functions as a variable in an operator-variable chain, the existence of an A-copy has often been called into question. The skepticism is most explicitly expressed by Lasnik (1999), who says, "A-movement, unlike A'-movement, does not leave a trace" (p. 207).

Pros and cons concerning the existence of A-copies make contrastive and often coflicting predictions as to the phenomena closely associated with copies. Among them is the Proper Binding Condition (PBC), which requires a copy (or a trace in pre-minimalst terms) to be bound. Since this condition makes direct reference to copies, it seems reasonable to consider that PBC-related phenomena provides a clue to settle the debate. Consider the following sentences.

(1) a. *[Which picture of t_1]$_2$ do you wonder who$_1$ John has stolen t_2 ?

b. They all said that John would pass the exam, and [t_1 pass the exam]$_2$ he$_1$ did t_2 .

These sentences differ in two respects. First, though they both contain a moved constituent with an unbound copy t_1 , only (1a) is ruled out. Secondly, while t_1 results from A'-movement in (1a), it results from

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A-movement in (1b). The A/A' contrast in this respect, especially the grammaticality of (1b), is often taken as evidence against A-copies (Takahashi 2001, Kuno 2003, Saito 2003, etc.).

This paper, however, demonstrates that A-copies do exist and that the exemption from the PBC should be ascribed to another factor. As a first step to this end, section 2 demonstrates that not all instances of A-movement with subsequent remnant movement are immune to the PBC. After estabilishing that there are PBC-sensitive A-copies as well as PBC-free A-copies, section 3 explores the factor that distinguishes between them. It is proposed that an A-copy is subject to the PBC if it occupies a θ'-position. Section 4 turns to a contrast between English and Japanese with respect to the categorial status of VP-remnants and demonstrates that while English VP-preposing involves movement of νP, Japanese counterpart moves VP. This observation reinforces the argument that data examined in section 2 must be dealt with in terms of the PBC and cannot be reduced to other factors. Finally, section 5 concludes the paper.

2. PBC Violation with A-Movement

2.1 Remnant Movement of Predicate Phrases in English

A closer examination reveals that remnants resulting from A-movement are not always exempt from the PBC. First, Akmajian, Steele, and Wasow (1979; ASW) point out that VP-preposing in English is subject to a certain condition. A sentence is ruled out if the preposed VP contains an auxiliary verb in addition to the main verb.

(2) They swore that John might have been taking heroin, and ...
  a. ... **taking heroin,** he might have been!
  b. *... **been taking heroin,** he might have!
  c. *... **have been taking heroin,** he might! (ASW, p. 23)

Notice that the preposed constituent in each sentence contains a copy resulting from subject-raising (i.e. A-movement). While the putative absence of A-copies seems to successfully account for the absence of a PBC violation in (2a), it fails to predict the ungrammaticality of (2b, c).

Secondly, a contrast arises between control and raising constructions with respect to the legitimacy of preposing of the infinitival complement. Jacobson (1990) reports that while a control sentence allows the complement clause to be preposed, a raising sentence does not.

(3) a. **To take out the garbage,** he {refused/forgot/remembered}.
b. ***To be nice,** he {seems/appears}.

The control/raising distinction is reflected in the form of the embedded subject as well. The embedded subject position is occupied by a null pronoun PRO in the control construction, whereas the relevant position is occupied by a copy of the matrix subject in the raising construction.

(4) a. [PRO$_1$ to take out the garbage], he$_1$ {refused/forgot/remembered}.
b. *[t_1 to be nice], he$_1$ {seems/appears}.

Since the PBC is a condition on copies, the grammaticality of (3a) is accounted for straightforwardly: the preposed complement clause does not contain an offending copy. This in turn suggests that the ungrammaticality of (3b) is attributable to the presence of an offending copy inside the infinitival complement.[1]

2.2 Remnant Movement after A-Scrambling in Japanese

As a piece of cross-linguistic evidence for PBC-sensitive A-copies, this subsection examines a particular type of scrambling in Japanese.

(5) a. John-ga ayauku betuno kuruma-ni nimotu-o tumi kaketa.
J.-NOM nearly wrong car-onto baggage-ACC to.load was.about
'John was nearly about to load the baggage onto a wrong car.'
b. John-ga **nimotu-o**$_1$ ayauku [betuno kuruma-ni t_1 tumi] kaketa.
J.-NOM baggage-ACC nearly wrong car-onto to.load was.about

Each of these sentences contains a raising verb that takes an infiniti-

1 The infinitival complements in (3a, b) are different not only in their subjects but also in their categorial status. A standard view is that while a control clause is a CP, a raising clause is a TP. Therefore, it might be the case that the contrast in (3a, b) is reduced to the difference in categorial status rather than to the embedded subjects. However, there are good reasons to exclude this possibility. See section 4 for detailed discussion on this issue.

val complement. (5b) is derived from (5a) by scrambling the object NP, which is initially merged with the embedded infinitival verb *tumi* 'to.load'.[2]

Application of various syntactic diagnostics reveals that this type of scrambling is a sub-type of A-movement. For instance, it serves to remedy a weak crossover (WCO) violation (see (6a, b)) and a strong crossover (SCO) violation (see (7a, b)).

(6) a. *John-ga sono$_1$ tyosya nomaede ayauku **dono hon-ni-mo$_1$**
J.-NOM its author in.front.of nearly which book-to-even
keti-o tuke kaketa node Bill-wa awateta.
criticism-ACC to.give was.about because B.-TOP got.panicked
'Bill got panicked because John was nearly about to give a criticism to every book in front of its author.'

b. John-ga **dono hon-ni-mo$_1$** sono$_1$ tyosya nomaede ayauku t_1
J.-NOM which book-to-even its author in.front.of nearly
keti-o tuke kaketa node Bill-wa awateta.
criticism-ACC to.give was.about because B.-TOP got.panicked

(7) a. *Mary-wa ayauku soitu$_1$-ni **dare$_1$**-no syasin-o mise kaketa no?
M.-TOP nearly him-DAT who-GEN picture-ACC to.show was.about Q
'Whose picture was Mary nearly about to show him?'

b. Mary-wa [**dare$_1$**-no syasin-o]$_2$ ayauku soitu$_1$-ni t_2 mise
M.-TOP who-GEN picture-ACC nearly him-DAT to.show
kaketa no?
was.about Q

Mitigation of WCO is known to be a hallmark of non-operator movement and the absence of an SCO violation is known to be unique to A-movement (Mahajan 1989, Webelhuth 1989, Saito 1992, Tada 1993, Nemoto 1993). Therefore, these examples show that scrambling in the raising construction can be grouped with A-movement.

This observation seems to be reinforced by the data related to the

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2 The ungrammaticality of (i) indicates that the adverb *ayauku* 'nearly' modifies only the raising predicate *kaketa* 'was.about.to'.

(i) *John-ga ayauku betuno kuruma-ni nimotu-o tunda.
J.-NOM nearly wrong car-onto baggage-ACC loaded
'John has nearly loaded the baggage onto a wrong car.'

The occurrence of the scrambled object before this adverb in (5b), therefore, means that the object is eventually placed in the matrix domain.

binding theory.

(8) a. Mary-ga John$_1$-no hahaoya nomaede ayauku **kare$_1$**-o
M.-NOM J.-GEN mother in.front.of nearly him-ACC
kenasi kaketa node Bill-wa awateta.
to.criticize was.about because B.-TOP got.panicked
'Bill got panicked because Mary was nearly about to criticize him$_1$ in front of John's$_1$ mother.'

b. ?*Mary-ga **kare$_1$**-o John$_1$-no hahaoya nomaede ayauku t_1
M.-NOM him-ACC J.-GEN mother in.front.of nearly
kenasi kaketa node Bill-wa awateta.
to.criticize was.about because B.-TOP got.panicked

(8b) violates the Binding Condition C. The scrambled pronoun *kare* 'him' binds an R-expression *John*. This means that it moves into a position from which it is able to A-bind another element.[3]

Having established that scrambling out of a raising-type infinitival complement is a sub-type of A-movement, let us now consider whehther it is exempt from the PBC.

(9) a. *[Hinpanni t_1 dasi-sae]$_2$ John-ga **koonetu-o$_1$** sono koro
frequently to.develop-even J.-NOM high.fever-ACC that period
kara t_2 sihazimeta node ...
since began.to.do because
'because John began to frequently develop a high fever around that time'

b. [Hinpanni **koonetu-o** dasi-sae]$_2$ John-ga sono koro
frequently high.fever-ACC to.develop-even J.-NOM that period
kara t_2 sihazimeta node ...
since began.to.do because

(9a) minimally differs from (9b) in that the object NP in the embedded constituent is scrambled into the matrix domain before the remnant is preposed. Its ungrammaticality then means that the copy resulting from the scrambling in the raising construction is subject to the PBC despite its being an A-copy.

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3 In fact, a category undergoing A'-movement cannot function as an A-binder. Thus, the topicalized anaphor in the example below does not induce a Condition C violation.
(i) Himself$_1$, John$_1$ likes t_1.

3. Θ-Marking and Applicability of the PBC

The previous section demonstrated that copies resulting from some instances of A-movement are subject to the PBC. This section considers what distinguishes between the PBC-sensitive A-copies and the PBC-free A-copies.

3.1 Θ-Positions vs. Θ'-Positions

As a first step to solve the puzzle, let us begin with comparing remnants which cause PBC violations and those which do not. Consider (2a-c), which is repeated as (10a-c).

(10) They swore that John might have been taking heroin, and ...

a. ... **taking heroin,** he might have been!

b. *... **been taking heroin**, he might have!

c. *... **have been taking heroin**, he might!

(10a) and (10b, c) differ in categorial status of the moved remnant. While the VP in (10a) contains a lexical verb, VPs in (10b, c) contain auxiliary verbs as well. A lexical verb and an auxiliary verb differ in their ability of θ-marking. While the former θ-marks an argument that occupies the specifier position, the latter does not. Now, suppose that the subject raises successive-cyclically via specifier positions of each verbal projection. In the ungrammatical examples below, the preposed phrase contains at least one θ'-position occupied by an A-copy.

(11) They swore that John might have been taking heroin, and ...

a. [$_{VP}$ $t_{1<+\theta>}$ taking heroin], he$_1$ might have been!

b. *[$_{VP}$ $t_{1<-\theta>}$ been [$_{VP}$ $t_{1<+\theta>}$ taking heroin]], he$_1$ might have!

c. *[$_{VP}$ $t_{1<-\theta>}$ have [$_{VP}$ $t_{1<-\theta>}$ been [$_{VP}$ $t_{1<+\theta>}$ taking heroin]]], he$_1$ might!

Thus, a possible generalization might be that an A-copy in a θ-position counts as being legitimate and is exempt from the PBC, whereas one in a θ'-position does not.

This distinction successfully accounts for the contrast in (12) as well.

(12) a. ***To be nice,** he {seems/appears}.

b. **Nice,** he {seems/appears}.

These sentences are minimally different in that while (12a) involves preposing of an infinitival TP, (12b) involves preposing of a bare AP. TP is headed by a non-θ-marking category T^0, whereas the AP is headed by a θ-marking category A^0. This in turn means that Spec-TP hosting the subject copy is a θ'-position, whereas Spec-AP is a θ-position. Given the ungrammaticality of (12a) caused by a PBC violation (see discussion in section 2.1), the subject copy in a θ'-position (i.e. Spec-TP) is an offending copy. By contrast, the grammaticality of (12b) indicates the inapplicability of the PBC, which in turn means that the copy in a θ-position (i.e. Spec-AP) is exempt from the condition.

3.2 Θ-Marking after Movement

Bearing in mind the generalization made in the previous subsection, let us now re-consider (9), which is repeated here as (13).

(13) a. *[Hinpanni t_1 dasi-sae]$_2$ John-ga **koonetu-o**$_1$ sono koro
frequently to.develop-even J.-NOM high.fever-ACC that period

kara t_2 sihazimeta node ...
since began.to.do because

'because John began to frequently develop a high fever around that time'

b. [Hinpanni **koonetu-o** dasi-sae]$_2$ John-ga sono koro
frequently high.fever-ACC to.develop-even J.-NOM that period

kara t_2 sihazimeta node ...
since began.to.do because

The discussion so far leads us to the prediction that the copy inside the preposed phrase is subject to and ruled out by the PBC because it occupies a θ'-position. Yet, the position in question is canonically a potential θ-position. It is the complement of the transitive verb *dasi* 'to.develop', the position where the internal argument is initially merged and θ-marked. Therefore, regarding it as a θ'-position is equal to saying that the transitive verb does not θ-mark its object

when they are initially merged but that θ-marking takes place after scrambling. It is shown below that this indeed is the case.

Saito and Hoshi (2000) convincingly demonstrate that θ-marking can take place throughout the derivation in various constructions. Among them is the so-called light verb construction in Japanese illustrated below.

(14) Syoonen-ga murabito-ni [$_{VP}$ [$_{CP}$ ookami-ga kuru to-no]
boy-NOM villagers-DAT wolf-NOM come COMP-GEN
KEEKOKU-o] sita.
warning-ACC did
'The boy warned the villagers that a wolf was coming.'

In this construction, a nominal head like KEEKOKU 'warning' rather than the light verb *suru* 'do' functions as the main predicate that takes arguments and θ-marks them. For this reason, the relevant noun is often called verbal noun (VN).[4] In (14), the subject NP, the dative-marked NP, and the theme CP are all arguments of the VN KEEKOKU. A comparison with (15) makes it clear that the number of arguments appearing in this construction is determined by the VN rather than the light verb.

(15) John-ga [$_{NP}$ piza-no HAITATU-o] sita.
J.-NOM pizza-GEN delivery-ACC did
'John delivered the pizza.'

Another peculiarity is that the VN's arguments do not always have to occur inside its projection. Only the theme CP argument is marked by genitive case in (14), which indicates that it occurs inside the NP. By contrast, since the other arguments are not marked by genitive case, they are located outside. This distribution of arguments poses a question to the view that a predicate θ-marks its arguments inside its projection. Saito and Hoshi (2000) attempt to solve this kind of mismatch by postulating covert incorporation of the VN into the verb *suru* at LF. By doing so, the VN enters the same projection where the subject and the goal arguments occur. It is not until the VN

4 VNs appearing in the light verb construction are typed in SMALL CAPITALS in this paper.

undergoes covert incorporation that it can discharge the rest of the θ-roles it carries.[5]

Notice that Saito and Hoshi's (2000) analysis abandons the restriction that forces θ-marking to take place before movement and instead opens up the possibility that a predicate can θ-mark its arguments throughout the derivation, in particular after the application of movement. If their analysis is on the right track, it makes a curious prediction concerning the scrambling construction we are dealing with here. That is to say, the scrambled theme CP in (16b) is θ-marked in its landing site rather than in its base position.

(16) a. Syoonen-ga ayauku [$_{VP}$ murabito-ni [$_{CP}$ **ookami-ga kuru to**]
boy-NOM nearly villagers-DAT wolf-NOM come COMP
[$_{NP}$ KEEKOKU-o] si] kaketa node ...
warning-ACC to.do was.about because
'because the boy was nearly about to warn the villagers that a wolf was coming...'

b. Syoonen-ga [$_{CP}$ **ookami-ga kuru to**]$_1$ ayauku [$_{VP}$ murabito-ni
boy-NOM wolf-NOM come COMP nearly villagers-DAT
t_1 [$_{NP}$ KEEKOKU-o] si] kaketa node ...
warning-ACC to.do was.about because

(16a) and (16b) contain a raising verb embedding the light verb construction. (16b) is derived from (16a) by scrambling the theme CP to the post-subject position. Notice that since this CP is base-generated outside the VN, it is not θ-marked in its base position. The actual θ-marking takes place in the covert component when the VN incorporates into the light verb and further into the matrix verb *kaketa* 'was.about.to'. The VN discharges its θ-role to the theme CP occupying the post-subject position. Since the copy position in (16b) does not count as a θ-position, remnant movement of the embedded constituent results in a violation of the PBC.

(17) *[$_{VP}$ Murabito-ni t_1 KEEKOKU-o si-sae]$_2$ syoonen-ga
villagers-DAT warning-ACC do-even boy-NOM

5 A similar analysis is proposed by Dubinsky (1997) as well.

[$_{CP}$ **ookami-ga** **kuru** **to**]$_1$ ayauku t_2 sikaketa node ...
wolf-NOM come COMP nearly was.about.to.do because

To sum up, this section has shown that θ-marking may take place throughout the derivation and that the position of initial merger does not always count as a θ-position. In particular, it has become clear that an argument scrambled out of the raising-type infinitival complement is θ-marked in its surface position (i.e. in its landing site) and that its base position is a θ'-position. This analysis successfully accounts for why remnant movement results in a PBC violation in (9a) and (17).

4. Categorial Status of Remnants

4.1 Illegitimate Movement of CP Remnants

We have briefly noted the possibility that categorial status plays a crucial role in determining the legitimacy of remnant movement (see footnote 1). More specifically, although we argued that the following contrast is attributable to the presence or absence of an offending copy inside the preposed infinitival clause, another possible account is to make much of the difference in categorial status of the relevant constituents.

(18) a. **To take out the garbage,** he {refused/forgot/remembered}.
b. ***To be nice,** he {seems/appears}. (=(3a,b))

A common view is that while an infinitival complement of a control verb is a CP, the infinitival complement to a raising verb is a TP.[6] It might be possible, then, to consider that the CP-TP distinction is associated with the applicability of movement. One could say, for instance, that only phase categories such as CPs or vPs can be displaced. If the analysis along this line is appropriate, the contrast in (18) ends up being irrelevant to the PBC and does not count as evidence. On the other hand, this section demonstrates that categorial status does not have to do with the applicability of remnant movement.

6 See Ormazabal (1995) and Bošković (1997) for different views.

Saito (1985, 1994) and Nemoto (1993) point out that scrambling can take place out of a finite complement to the post-subject position.

(19) a. John-ga$_1$ minna-ni [$_{CP}$ *pro*$_1$ kinoo sono hon-o katta
J.-NOM everyone-DAT yesterday that book-ACC bought
to] itta.
COMP told
'John told everyone that he bought that book yesterday.'

b. John-ga$_1$ **sono hon-o$_2$** minna-ni [$_{CP}$ t_2 [$_{TP}$ *pro*$_1$ kinoo t_2 katta]
J.-NOM that book-ACC everyone-DAT yesterday bought
to] itta.
COMP told

The verb *itta* 'told' in (19a) takes a finite CP complement whose subject is a null pronoun *pro* co-indexed with the matrix subject. In (19b), the object of the embedded verb is scrambled out of the CP and ends up in the post-subject position. This indicates that not only infinitival complements but also finite CP complements allow scrambling to the post-subject position.[7]

Bearing this in mind, consider the following sentence.

(20) *[$_{CP}$ t_2 [$_{TP}$ *pro*$_1$ kinoo t_2 katta] to]$_3$ John-ga$_1$ **sono hon-o$_2$**
yesterday bought COMP J.-NOM that book-ACC
minna-ni t_3 itta.
everyone-DAT told

After scrambling takes place, the remnant CP is moved to the sentence-initial position. The ungrammaticality of this sentence is unexpected in the analysis that ascribes the ungrammaticality of a sentence like (18b) to the ban on movement of TP. (20) shows that illegitimate remnant movement should be treated as a case of PBC violation. Since the object is scrambled out of a phase CP, it is required to stop by at Spec-CP on its way to the post-subject position

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7 However, this option is available only when the CP contains a null pronominal subject. As pointed out by Saito (1985, 1994) and Nemoto (1993), when the embedded subject has a phonetic form, scrambling out of CP is prohibited.

(i) ??John-ga sono hon-o$_1$ minna-ni [$_{CP}$ Bill-ga kinoo t_1 katta
J.-NOM that book-ACC everyone-DAT B.-NOM yesterday bought
to] itta.
COMP said

to comply with the Phase Impenetrability Condition (Chomsky 2000, 2001). Although the base position of the object counts as a θ-position, Spec-CP does not. Therefore, the copy in this position is considered to be an illegitimate entity and the analysis proposed in this paper correctly predicts that it induces a PBC violation. Taking account of the discussion so far, it may safely be concluded that illegitimate remnant movement is ruled out in terms of the PBC rather than categorial status of the remnant.

4.2 The So-Called VP-Preposing

A close examination of the so-called VP-preposing also leads to the same conclusion. To begin with, let us consider in detail the structure of the moved phrase in Japanese.

(21) a. John-wa nokorimono-o tabe-ta.
J.-TOP leftovers-ACC eat-PAST
'John ate leftovers.'

b. John-wa nokorimono-o tabe-*sae* *(**si**)-ta.
J.-TOP leftover-ACC eat-even do-PAST
'John even ate leftovers.'

c. [Nokorimono-o tabe-*sae*]$_1$ John-wa t_1 *(**si**)-ta.
leftover-ACC eat-even J.-TOP do-PAST
'Even eat leftovers, John did.'

While the verb stem hosts the past tense affix in (21a), it is the dummy verb *si* that hosts the relevant affix in (21b). This is because the verb stem hosts another element, namely, the emphatic adverbial particle. In fact, (21b) becomes ungrammatical without the dummy verb. (21c) is derived from (21b) by preposing the VP containing the adverbial particle. Thus, a generalization is that the dummy is required in order to avoid the stray (tense) affix.

In this respect, the occurrence of the dummy verb *si* in Japanese may be considered parallel to *do*-support in English. As a matter of fact, English VP-preposing requires this dummy verb when no other auxiliary verb is available in the same clause.

(22) They say that John took heroin, and [take heroin]$_1$ he certainly

*(**did**) t_1.

Yet, Japanese and English are not perfectly parallel to each other with respect to dummy verb insertion. Kageyama (1993), Miyagawa (1998), and Nishiyama and Cho (1998) point out that the Japanese dummy verb can be attached to heads other than tense.

(23) John-wa nokorimono-o tabe-sae *(**si**)-nakat-ta.
J.-TOP leftover-ACC eat-even do-NEG-PAST
'John didn't even eat leftovers.'

The dummy verb supports negation in this sentence. Negation in Japanese is known to be a bound morpheme that always requires a host. Thus, the sentence becomes ungrammatical without this verb. In fact, the following example indicates that the dummy verb is not always attached to a verbal element.[8]

(24) Yasuyasuto kaware-ba, konna nayami-mo **si**-wa **si**-nai.
easily change-if this.much be.distressed-even do-TOP do-NEG
'If I could easily change, I would not even be distressed this much.'

The first instance of *si* is attached to the topic particle. Particles as well as negation are also bound morphemes. This indicates that the Japanese dummy verb is attached to a bound morpheme such as tense, negation, and particles. This generalization seems to be supported by the following example.

(25) John-wa Bill-ni [sono uta-o utau-yooni-sae] (*si-)itta.
J.-TOP B.-DAT that song-ACC sing-COMP-even (*do-)said
'John told Bill even to sing that song.'

The adverbial particle is attached to the complementizer in this sentence. However, the occurrence of this particle does not require insertion of a dummy verb. On the contrary, attachment of *si* to the main verb makes the sentence ungrammatical.

Bearing this point in mind, consider the following example.

(26) John-wa nokorimono-o tabe-sae **si**-hazime-ta.
J.-TOP leftover-ACC to.eat-even to.do-begin-PAST
'John began to even eat leftovers.'

8 (24) is found in the Internet<http://www.m-cafe.info/archives/2004_07.html>.

Here, the dummy verb is attached to the full verb *hazime* 'begin' rather than a bound morpheme. Yet, given the generalization that a dummy verb is inserted to host a bound morpheme, it is more reasonable to consider that the dummy verb actually supports a functional head in (26) as well. The verbal complex in this sentence has the following form without the emphatic particle and the dummy verb.

(27) a. tabe hazime-ta
to.eat begin-PAST

b. [$_{\nu P}$ [$_{VP}$... tabe] ν] hazime

Since the infinitival verb *tabe* 'to.eat' is a transitive verb, the embedded constituent contains νP. Attachment of the emphatic adverbial particle to the infinitival verb head creates the following structure, where the functional head v is left unaffixed.

(28) [$_{\nu P}$ [$_{VP}$... tabe-*sae*] ν] hazime

To support this head, the dummy *si* is inserted and a sentence like (26) is created. When VP-preposing is applied to (26), the resulting structure looks like (29).

(29) [$_{VP}$ Nokorimono-o tabe-sae]$_1$ John-wa [$_{\nu P}$ [$_{VP}$]$_1$ **si-** ν] hazime-ta.
leftover-ACC to.eat-even J.-TOP to.do begin-PAST

'Even eat leftovers, John began to do.'

Given the discussion so far, the dummy verb hosts the ν head. This means that the preposed constituent is not the entire νP but only the lower VP.

By contrast, *do*-insertion in English is more restricted, as the following paradigm shows.

(30) a. They all said that John would pass the exam, and ...
i) ...[$_{\nu P}$ pass the exam]$_1$ he **will-T** [$_{\nu P}$]$_1$.
ii) *...[$_{VP}$ pass the exam]$_1$ he will-T [$_{\nu P}$ **do-** ν [$_{VP}$]$_1$].

b. They all said that John would pass the exam, and ...
i) ...[$_{\nu P}$ pass the exam]$_1$ he tried **to-T** [$_{\nu P}$]$_1$.
ii) *...[$_{VP}$ pass the exam]$_1$ he tried to-T [$_{\nu P}$ **do-** ν [$_{VP}$]$_1$].

(30a.i) exemplifies VP-preposing in the sentence containing a modal

auxiliary verb *will*. The auxiliary verb prevents *do*-insertion, as illustrated by the hypothetical structure (30a.ii), where the dummy verb is inserted to support v. If this happened, VP rather than vP would be preposed, but the ungrammaticality of (30a.ii) shows that this is not the option taken. The same observation applies to (30b). Since the infinitival *to* supports T, *do*-insertion to another functional head v is unnecessary. This in turn means that English VP preposing is in fact vP-preposing.

In summary, while English VP-preposing involves the phase vP, Japanese VP-preposing is applied only to the lower VP, which does not constitute a phase. Thus, the structure of a sentece like (9b), which instantiates VP-preposing, may look like the following.

(31) $[_{VP}$ Hinpanni koonetu-o dasi-sae$]_1$ John-ga sono koro kara
frequently high.fever-ACC to.develop-even J.-NOM that period since
$[_{vP}$ $[_{VP}$ $]_1$ **si-v**$]$ hazimeta node ...
to.do began because

'because John began to frequently develop a high fever around that time'

The well-formedness of (31), where a non-phase VP is preposed, lends further support to the view that illegitimate preposing as in (3b) is ruled out not because the preposed phrase is a non-phase constituent but because it violates the PBC.

5. Conclusion

This paper has shown on the basis of PBC effects that A-movement does leave a copy. There are two types of A-movement with respect to the PBC effects. While standard A-movement such as subject-raising in English is exempt from the PBC, scrambling in the raising construction in Japanese is subject to this condition. A crucial factor distinguishing between them resides in the thematic property of the copy position. An A-copy is exempt from the PBC if it occupies a θ-position. From this perspective, a copy resulting from A-scrambling occupies a θ'-position. This paper demonstrated that this is indeed

the case. In the Japanese A-scrambling construction, θ-marking to the scrambled phrase does not take place when the argument is initially merged with the predicate. Instead, it takes place in the covert component. This means that only the landing site of the scrambled phrase is qualified as a θ-position. Therefore, the copy occupying the base position, which is a θ'-position, constitutes an offending copy and violates the PBC if it is contained inside a constituent undergoing remnant movement.

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